

## **IN THE CLAIMS**

- 1 1. (original) A method for communicating a bit stream using turbo coding  
2 comprising:
  - 3 encoding each input bit in the bit stream using a single  $1/3$  rate turbo
  - 4 encoder to produce a set of three bits for each input bit;
  - 5 repeating one of the three bits in each set to produce a set of four bits for
  - 6 each input bit;
  - 7 increasing a time interval between the four bits in the set before transmitting
  - 8 the set of four bits on a communications channel;
  - 9 decreasing the time interval between the set of four bits received via the
  - 10 communications channel;
  - 11 diversity combining the received set of four bits into a received set of three
  - 12 bits; and
  - 13 decoding each received set of three bits using a  $1/3$  rate turbo decoder to
  - 14 recover an output bit for each input bit.
- 1 2. (original) The method of claim 1 wherein encoding uses two coders, each with a  
2  $1/2$  rate turbo coder, and a first interleaver.
- 1 3. (original) The method of claim 1 wherein one of the three bits is repeated in a  
2 cyclic manner.
- 1 4. (original) The method of claim 1 wherein the time interval is increased with a  
2 second interleaver.

- 1 5. (original) The method of claim 1 wherein the time interval between any two  
2 identical bits is larger than a channel coherent time.
- 1 6. (original) The method of claim 1 wherein diversity combining uses selection  
2 diversity.
- 1 7. (original) The method of claim 1 wherein diversity combining uses equal gain  
2 diversity.
- 1 8. (original) The method of claim 1 wherein diversity combining uses maximum  
2 ratio combining.
- 1 9. (original) The method of claim 1 wherein the decoding uses maximum a prior  
2 processes.
- 1 10. (original) The method of claim 1 wherein the diversity combining is applied to  
2 the set of four received bits.
- 1 11. (original) A system for communicating a bit stream using turbo coding  
2 comprising:  
3 a transmitter further comprising a single 1/3 rate turbo encoder configured to  
4 encode each input bit in the bit stream using to produce a set of three bits, a bit  
5 repeater configured to repeat one of the three bits in each set to produce a set of  
6 four bits for each input bit, and an interleaver configured to increase a time interval  
7 between the four bits in the set before transmitting the set of four bits on a  
8 communications channel; and

9           a receiver further comprising a de-interleaver configured to decrease the  
10 time interval between the set of four bits received via the communications channel,  
11 a diversity combiner configured to reduce the received set of four bits into a  
12 received set of three bits, and a single 1/3 rate turbo decoder configured to decode  
13 each received set of three bits to recover an output bit for each input bit.